

REMARKS/ARGUMENTS

Status of the Claims

Claims 1-18 are pending in the application, of which claim 18 has been withdrawn from further consideration in response to the prior Restriction Requirement. Claim 1 is the only independent claim. Independent claim 1 has been amended to incorporate additional features disclosed in paragraph [0060] and Figs. 2 and 3 of applicants' published application (US 2007/0190753). Claim 16 has been amended to address a minor informality without narrowing the scope of the claim or of any claim element contained therein. No new matter has been added.

Reconsideration of the subject application in view of the within claim amendments and the following remarks is hereby requested.

Overview of the Office Action

Claim 16 has been rejected under 35 U.S.C. § 112 due to informalities.

Claims 1-8 and 12-17 have been rejected under 35 U.S.C. §103(a) as unpatentable over Juergensen (WO 03/054939; equivalent to US 2005/0022725) in view of Haerle (US 6,100,104).

Claims 9-11 have been rejected under 35 U.S.C. §103(a) as unpatentable over Juergensen in view of Haerle and in further view of Braun (US 6,110,277).

Information Disclosure Statement

In response to the Examiner's objection to one of applicants' Information Disclosure Statements filed January 30, 2006, applicants submit herewith a new Information Disclosure Statement (IDS) listing the same non-U.S. patent documents which were cited in the International Search Report (ISR) of the corresponding International PCT Application and, accordingly, should already be present in the USPTO file. Copies of these non-U.S. patent documents are being provided as requested by the Examiner.

The new IDS also includes additional references.

Summary of the Subject Matter Disclosed in the Specification

The following descriptive details are based on the specification. They are provided only for the convenience of the Examiner as part of the discussion presented herein, and are not intended to argue limitations which are unclaimed.

The specification discloses a method for the production of optoelectronic semiconductor chips each comprising a plurality of structural elements having a semiconductor layer sequence (8). The semiconductor layers of the structural elements (12) are grown by means of selective epitaxy. See paragraph [0002] of applicants' published application.

Formality-Based Claim Rejections

In the subject application, the semiconductor layers are described as being in "a lenslike form" (see, e.g., paras. [0029] and [0049] of the published application and shown in Fig. 2). Thus, the semiconductor layers of the structural elements of Fig. 2 are shown to have a curved form or surface. One skilled in the art will appreciate from this disclosure that the term "a lenslike form" refers to a curved form.

Claim 16 has been amended to replace the term "lenslike" with "curved". In view of this claim amendment, the 35 U.S.C. § 112 rejection of claim 16 is deemed to have been overcome.

Patentability of the Claimed Invention

A. Independent Claim 1

Independent claim 1 now recites the step of "singulating the chip composite base with applied material to form semiconductor chips each having the plural structural elements arranged alongside one another, the structural elements comprising a semiconductor layer sequence." This feature of amended independent claim 1 is not taught by the combination of Juergensen and Haerle.

Juergensen teaches a process for depositing III-V semiconductor layers on a non-III-V substrate. According to Juergensen, a III-V layer, in particular a buffer layer, is deposited on a III-V seed layer k. In one example of Juergensen, the buffer layer is grown on a masking layer deposited on the seed layer k. The resultant buffer layer c is a continuous layer (see paras. [0002], [0005]-[0007] and Fig. 3 of Juergensen).

As the Examiner has acknowledged in the Office Action, Juergensen does not teach singulating the chip composite base with applied material to form semiconductor chips (see page 4 of the Office Action), much less semiconductor chips each comprising a plurality of structural elements in the form of semiconductor layer sequences arranged alongside one another, as now expressly recited in amended independent claim 1.

Haerle discloses a method for forming a plurality of semiconductor chips in the openings (windows) 10 of a mask layer 4. According to Haerle, a mask layer 4 is formed on a substrate wafer 19 and is then photopatterned to form a plurality of windows 10 in the mask layer 4 (see Figs. 1 and 3). A semiconductor sequence 18, including a light-emitting layer 23, is epitaxially deposited in the windows 10 (see Figs. 4 and 5; col. 6, ll. 59; and col. 7, ll. 13-24).

Haerle, however, does not teach the features of claim 1 that Juergensen lacks. As is clearly shown in Figs. 5 and 6 of Haerle, each of the semiconductor chips comprises only a single semiconductor sequence after the chip composite base is singulated into a plurality of individual singulated semiconductor chips as shown in Fig. 6. Consequently, such singulated semiconductor chip in Haerle lacks a plurality of structural elements arranged alongside one another, wherein each of the structural elements is a semiconductor layer sequence, as now expressly recited in amended independent claim 1. Haerle, therefore, does not remedy the deficiencies of Juergensen for at least this reason. Neither does any of the additional Examiner-cited art remedy these deficiencies.

In view of the foregoing, independent claim 1 as amended is deemed to patentably distinguish over the cited combination of Juergensen and Haerle, and the 35 U.S.C. § 103(a) rejection of independent claim 1 should accordingly be reconsidered and withdrawn.

B. Dependent Claims 2-17

Claims 2-17 depend, directly or indirectly, from allowable independent claim 1 and thus are each deemed to be allowable therewith.

In addition, these dependent claims each include features that serve to still further distinguish the claimed invention over the cited prior art.

Conclusion

In view of the foregoing, reconsideration, withdrawal of all rejections and allowance of all pending claims are respectfully solicited. Should the Examiner have any comments, questions, suggestions, or objections, the Examiner is respectfully requested to telephone the undersigned to facilitate an early resolution of any outstanding issues.

No fees or charges are believed to be required with this submission. However, if any such fees or charges are required at this time, they may be charged to our USPTO Deposit Account No. 03-2412.

Respectfully submitted,
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